TENTATIVE RESOLUTION NO. R9-2004-0002

A RESOLUTION ADOPTING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN DIEGO REGION TO INCORPORATE A TOTAL MAXIMUM DAILY LOAD (TMDL) FOR DISSOLVED COPPER IN SHELTER ISLAND YACHT BASIN, SAN DIEGO BAY

WHEREAS, The California Regional Water Quality Control Board, San Diego Region (hereinafter, Regional Board), finds that:

1. **BASIN PLAN AMENDMENT:** The proposed amendment of the Water Quality Control Plan for the San Diego Region (Basin Plan) described in the recitals below was developed in accordance with Water Code Section 13240 et seq.

2. **NECESSITY STANDARD** [Government Code §11353(b)]**:** This regulatory action meets the "Necessity" standard of the Administrative Procedures Act, Government Code, section 11353, subdivision (b). Amendment of the Basin Plan to establish and implement a Total Maximum Daily Load (TMDL) for Shelter Island Yacht Basin (SIYB) is necessary because the existing water quality does not meet applicable numeric water quality objectives for copper, or narrative water quality objectives for toxicity and pesticides. Clean Water Act Section 303(d) requires the Regional Board to establish and oversee the implementation of a TMDL under the water quality conditions that exist in SIYB. This TMDL for dissolved copper is necessary to ensure attainment of applicable water quality objectives and restoration of beneficial uses designated for SIYB.

3. **CLEAN WATER ACT SECTION 303(d):** The Shelter Island Yacht Basin portion of San Diego Bay was placed on the Clean Water Act Section 303(d) list of impaired waters in 1996 due to elevated levels of dissolved copper in the water column.

4. **BENEFICIAL USE IMPAIRMENTS:** Shelter Island Yacht Basin supports the same suite of beneficial uses as San Diego Bay. The most sensitive beneficial uses are those designated for protection of marine aquatic life and aquatic dependent wildlife as described in the Basin Plan definition of the marine habitat (MAR) and wildlife habitat (WILD) beneficial uses. The MAR and WILD beneficial uses of SIYB are threatened or impaired due to elevated levels of dissolved copper.

5. **WATER QUALITY OBJECTIVES:** The water quality objectives for copper in SIYB specify that concentrations in seawater for dissolved copper should not exceed 3.1 μg Cu/L for continuous or chronic exposures (not to be exceeded over a four-day average), and 4.8 μg Cu/L for brief or acute exposures (not to be exceeded over a one-hour average). These water quality objectives are based on, and equal, to the California Toxics Rule (CTR) water quality criteria for dissolved copper promulgated by USEPA. USEPA's CTR criteria are the legally applicable water quality standards in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the Clean Water Act.

In addition, the Basin Plan establishes the following narrative water quality objectives for "toxicity" and "pesticides" to ensure the protection of the MAR and WILD beneficial uses.

Toxicity Objective: *All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Board.*

The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water factors, shall not be less than that for the same water body in areas unaffected by the waste discharge or, when necessary, for other control water that is consistent with requirements specified in US EPA, State Water Resources Control Board or other protocol authorized by the Regional Board. As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour acute bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances will be encouraged.

Pesticide Objective: *No individual pesticide or combination of pesticides shall be present in the water column, sediments, or biota at concentration(s) that adversely affect beneficial uses. Pesticides shall not be present at levels which will bioaccumulate in aquatic organisms to levels which are harmful to human health, wildlife or aquatic organisms.*

6. **NUMERIC TARGETS:** TMDL Numeric Targets interpret and implement water quality standards (i.e., numeric and narrative water quality objectives and beneficial uses) and are established at levels necessary to achieve water quality standards. The Regional Board has set the copper TMDL Numeric Targets for both the numeric and narrative water quality objectives equal to the numeric water quality objectives for copper cited in Finding 5. The numeric targets for dissolved copper are 3.1 µg Cu/L for continuous or chronic exposure (4-day average) and 4.8 µg Cu/L (1-hour average) for brief or acute exposures. Attainment of the TMDL numeric targets will result in attainment of water quality standards in SIYB.

7. **SOURCES OF DISSOLVED COPPER:** Approximately ninety-eight percent (98%) of the total copper loading to SIYB originates from copper-based antifouling paints applied to the hulls of recreational vessels moored in SIYB marinas. Ninety-three percent (93%) of this total is attributable to copper entering the water column through passive leaching of copper from antifouling paints. The remaining five

percent (5%) enters the water column during periodic underwater hull cleaning of recreational vessel hulls in the marinas. Four other insignificant sources of copper were identified in the TMDL source analysis including urban runoff, direct atmospheric deposition, marine sediments and natural background.

8. **WATER QUALITY OBJECTIVE VIOLATIONS:** Elevated dissolved copper concentrations in SIYB have been sustained over time through continuous passive leaching of copper from antifouling paints. The effects of these discharges on water quality are exacerbated by factors such as a) the large number of vessels congregated in SIYB marinas (approximately 2200 vessels); b) the large combined surface area of vessel hulls leaching copper; and c) reduced tidal flushing caused by the configuration of the enclosed basin. Furthermore, since recreational vessels spend most of their time moored in marinas, most of the copper from antifouling paints on the vessel hulls is released in the marinas. Sampling surveys conducted by the Regional Board in SIYB during 1994 and 2000 documented water column concentrations as high as12 µg Cu/L and 8 µg Cu/L, respectively.

9. **ADVERSE EFFECTS OF COPPER:** Copper is used as the bioicide in antifouling paints because of its known toxicity to marine aquatic life. At relatively low concentration levels, copper is toxic to aquatic organisms. Copper toxicity to aquatic life varies between species and within individual species life stages. The early life stages of fish, bivalves and echinoderms are especially vulnerable to copper contamination. Copper tends to accumulate in sediment, threatening the benthic life at SIYB. Copper in the sediment may need to be removed through human intervention, such as dredging which can be very costly. Because of these adverse affects of copper, copper-based antifouling paints are banned in parts of Europe.

10. **TOTAL MAXIMUM DAILY LOAD:** [40 CFR 130.2(i)] The Total Maximum Daily Load (TMDL) for copper discharges into SIYB is calculated to be 567 kilograms of copper per year (kg Cu/year). The TMDL is equal to the assimilative or Loading Capacity (LC) of SIYB for copper and is defined as the maximum amount of copper that SIYB can receive and still attain water quality objectives and protection of designated beneficial uses. The TMDL is comprised of the sum of all individual Waste Load Allocations (WLAs) for point source discharges of copper, the sum of all Load Allocations (LAs) for nonpoint source discharges of copper, and natural background. The TMDL includes a margin of safety (MOS) that takes into account any uncertainties in the TMDL calculation. (i.e. TMDL = LC = $\sum$ WLAs + $\sum$ LAs + MOS). The TMDL calculations also account for seasonal variations and critical conditions.

11. **ALLOCATIONS AND REDUCTIONS:** A seventy six percent (76%) overall reduction of residual copper loading to SIYB is required to meet the TMDL of 567 kg Cu/year. The assigned allocations from each source translate into a percent reduction of dissolved copper from current loading. Loading due to passive leaching must be reduced by eighty-one percent (81%) from current loading. Loading due to underwater hull cleaning must be reduced by twenty-eight percent (28%) from

current loading. From an overall perspective, passive leaching loading must be reduced by seventy-five percent (75%) from the combined total loading of all sources to SIYB. Underwater hull cleaning loading must be reduced by one percent (1%) from the combined total loading of all sources to SIYB.

12. **DISCHARGERS:** The Regional Board has identified the Port of San Diego, SIYB marina operators, persons owning boats moored in SIYB, and SIYB underwater hull cleaners as causing or permitting the discharge of residual copper from boat hull antifouling paints to SIYB.

13. **IMPLEMENTATION PLAN:** The necessary actions to implement the TMDL are described in the *Technical Report for Total Maximum Daily Load (TMDL) for Dissolved Copper in Shelter Island Yacht Basin, San Diego Bay, dated February 11, 2004*. The Regional Board will mandate compliance with the copper waste load reductions through the issuance of an NPDES permit to the Port of San Diego and marina owners/operators in SIYB. The Regional Board will also pursue regulatory and legislative solutions with other governmental agencies. The dischargers are required to meet the copper waste load reductions specified in the NPDES permit.

14. **COMPLIANCE MONITORING:** Water quality monitoring will be required to assess compliance in SIYB with the copper waste load reductions specified in this TMDL and with the water quality objectives for copper.

15. **COMPLIANCE SCHEDULE:** Copper waste load reductions are required over a 17-year staged compliance schedule period. The first stage consists of an initial 2-year grace period during which no copper waste load reductions are required. The subsequent 15-year reduction period is comprised of three stages during which incremental copper waste load reductions are required.

16. **SCIENTIFIC PEER REVIEW:** The scientific basis of this TMDL has undergone external peer review pursuant to Health and Safety Code Section 57004. The Regional Board has considered and responded to all comments submitted by the peer review panel.

17. **STAKEHOLDER PARTICIPATION:** Interested persons and the public have had reasonable opportunity to participate in review of the amendment to the Basin Plan. Efforts to solicit public review and comment include 3 public workshops held between May 2000 and December 2003; a public review and comment period of at least 45 days preceding the Regional Board public hearing; and written responses from the Regional Board to oral and written comments received from the public.

18. **ECONOMIC ANALYSIS:** The Regional Board has considered the costs of reasonably foreseeable methods of compliance with the waste load and load reductions specified in this TMDL.

19. **CEQA REQUIREMENTS:** The Basin Planning process has been certified as functionally equivalent to the California Environmental Quality Act (CEQA) requirements for preparing environmental documents and is, therefore, exempt from those requirements (Public Resources Code Section 21000 et seq.). The required environmental documentation (Basin Plan amendment, staff report, and environmental checklist) has been prepared.

20. **DE MINIMUS ENVIRONMENTAL EFFECTS:** This Basin Plan amendment will result in no potential for adverse effect, either individually or cumulatively, on wildlife.

21. **PUBLIC NOTICE**: The Regional Board has notified all known interested parties and the public of its intent to consider adoption of this Basin Plan amendment in accordance with Water Code Section 13244.

22. **PUBLIC HEARING:** The Regional Board has, at a public meeting on December 10, 2003, held a public hearing and heard and considered all comments pertaining to this Basin Plan amendment.

NOW, THEREFORE, BE IT RESOLVED that

1. **AMENDMENT ADOPTION:** The Regional Board hereby adopts this amendment to the Basin Plan to incorporate the Shelter Island Yacht Basin Dissolved Copper TMDL as set forth in Attachment A hereto.

2. **CERTIFICATE OF FEE EXEMPTION:** The Executive Officer is authorized to sign a Certificate of Fee Exemption.

3. **AGENCY APPROVALS:** The Executive Officer is directed to submit this Basin Plan amendment to the State Water Resources Control Board (State Board) in accordance with California Water Code Section 13245. The Regional Board requests that the State Board approve the Basin Plan amendment and forward it to Office of Administrative Law (OAL) and the United States Environmental Protection Agency for approval.

4. **NON-SUBSTANTIVE CORRECTIONS:** If, during the approval process for this amendment, the State Board or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Regional Board of any such changes.

I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Diego Region, on February 11, 2004.

_____TENTATIVE_____
JOHN H. ROBERTUS
Executive Officer